

**Notice of Allowability**

Application No.

10/706,576

Examiner

Jennifer M. Dolan

Applicant(s)

JIANG ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amdt. of 8/21/06.
2. ☒ The allowed claim(s) is/are 1-22.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
CARL WHITEHEAD, JR.  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800

## **DETAILED ACTION**

*This action is in response to the Amendment filed 21 August 2006*

### ***Examiner's Amendment***

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

In claim 8, line 13, --connection-- has been added between "facilitating electrical" and "of the second"

### ***Allowable Subject Matter***

2. Claims 1-22 are allowed.
3. The following is an examiner's statement of reasons for allowance:

Regarding claims 1-17, the primary reason for allowance is the combination of providing an interposer with a first device received in a receptacle in the interposer and a second device overlying the interposer, where the first device is electrically connected to the interposer by conductive members including laterally extending portions that are at least partially carried by a surface of the second device. The closest prior art of record teaches methods similar to that of

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claim 1, except that either the first level device is directly connected to the second level device without necessarily being connected to the interposer (see US 6,791,195 to Urushima and US 5,977,640 to Bertin et al.), or the first and second level devices are independently connected to the interposer (see US 6,353,963 to Shimada), rather than disclosing electrically connecting the first level device to the conductors on the top surface of the interposer substrate by conductive members including laterally extending portions carried by a surface of the second level device. Since the prior art provides no suggestion or motivation for disposing laterally extending conductive members on the surface of a second level device to enable electrical connection between a first level device and an interposer, it is the Examiner's opinion that a person having ordinary skill in the art would not have been led by the prior art to follow the method as claimed, but rather, would have either have been motivated to dispose components that do not require connection to the interposer in the receptacle, or to simply independently connect the device in the interposer to the interposer surface.

Regarding claims 18-22, the primary reason for allowance is the combination of providing an interposer with a receptacle formed therein and devices placed on each surface of the interposer and exposed to the receptacle, such that a laterally extending portion of a conductive element carried by a surface of the first device facilitates electrical connection of a second device to the interposer. The closest prior art of record (see US 2002/0047196 to Yang or US 6,441,495 to Oka) teaches disposing two devices on opposite surfaces of an interposer with a receptacle, such that the devices are connected through the receptacle. There is no teaching, however, of using a laterally extending portion of a conductive element carried by a surface of

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the first device to facilitate electrical connection of the second device to the interposer. It is the Examiner's opinion that a person skilled in the art would find no motivation or suggestion for connecting the devices in the claimed manner, but rather would be led by the prior art to directly connect the devices to each other and directly connect the devices to the interposer by use of wirebonding or solder bumps.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer M. Dolan whose telephone number is (571) 272-1690. The examiner can normally be reached on Monday-Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl W. Whitehead, Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jennifer M. Dolan  
Examiner  
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